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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LUU, AN T	

ART UNIT	PAPER NUMBER
2816	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,711	BROX ET AL.	
	Examiner	Art Unit	
	An T. Luu	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11-16-07*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15,16,19-22,25,26,28 and 34-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,16,19-22,25,26,28 and 34-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's Amendment filed on 11-16-07 has been received and entered in the case. The rejections set forth in the previous Office Action are maintained as indicated below.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-16, 19-22, 25, 26, 28 and 34-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "a second delay time is set in the second delay element as a function of the frequency of the first input", lines 13-14 of claim 15 is not clearly understood since claim 1 previously recites "the second delay element is configured to generate the first input", lines 5-6. And figure 2 does not show any kind of feedback to control "the second delay element". Claim 22 also has similar problem. In addition, a newly added portion of claim 15 is not understood and appear to be incorrectly recited since "the first input" refers to the output of 102 which is the input of 101. And "a frequency detection unit" is shown to detect frequency of "the externally generated clock signal" 103, not "detect[s] the frequency of the first input" as recited in claim.

All other claims are rejected for being dependent on the rejected claims as noted above.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 15, 19-22, 25, 26, and 34-38, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by the Miyamoto (US 6,573,776).

Miyamoto discloses in figure 10 and 1 an apparatus comprising a delay device comprising a first delay element 403 and a second delay element 402, wherein the first delay element is configured to generate a first output D responsive to a control signal (output of 407) and a first input C, and wherein the second delay element is configured to generate the first input responsive to the externally generated clock signal CLK and a set signal (output of 405) related to the frequency of the externally generated clock signal, wherein the second delay element (as shown in figure 1) comprises different second delay elements (22-0 to 22-7) in discrete steps providing different delay times (i.e., element 22-0 to 22-3 has Dn delay time and element 22-4 to 22-7 has Ds delay time) for the second delay element for different frequency ranges, at least one second delay element being for low frequencies of the externally generated clock signal and at least one further second delay element being for high frequencies of the externally generated clock signal (col. 9, lines 46-53), wherein the delay device further comprises a frequency detection unit having an output signal used to adjust the at least one second delay element such that a second delay time is set in the second delay element as a function of the frequency detection unit, a feedback device (404, 406) operably connected to the first delay element and

configured to generate a time delayed first output B, the feedback device operable to delay the first output by an amount substantially equal to a receiver time delay d2 plus a driver time delay d1, and a phase difference detection 407 device configured to generate signal responsive to the phase difference between the time delayed first output and the externally generated clock signal, and a frequency detection 405 unit configured to generate the set signal responsive to the frequency of the externally generated clock signal as required by claim 15. It is noted that the limitation "*wherein the second delay element for low frequencies and the further second delay element for high frequencies are switched over for different frequency ranges of the externally generated clock signal*" is seen as operation function of a variable delay section in which output of the detection circuit is for adjusting delay element of the second delay as a function of the frequency of the first input CLK, col. 15, lines 34-38 and col. 16, lines 24-26.

As to claim 19, figure 5 discloses the delay device comprising a controllable variable capacitor element (i.e., 54a controlled by 53a).

As to claims 20 and 21, figure 3 discloses the delay device comprising a controllably variable current inverter 31 and 32. It is noted that inverters 1 and 32 are in chain connection.

As to claims 22 and 25-26, they are rejected for reciting a method derived from the apparatus of claim 15 which is rejected as noted above.

As to claim 34, figure 10 shows the frequency detection unit 405 is operable to generate the set signal independent of the first output signal.

As to claims 36-38, the scopes of these claims are similar to that of claims 19-21. Therefore, they are rejected for the same reason set forth above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 16, 28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Miyamoto reference (US Patent 6,586,978) in view of the Li et al reference (US Patent 6,208,183).

Miyamoto discloses a delay locked loop comprising all the claimed invention except for teaching a filter circuit coupled between the phase detector and the delay element as required by claim 16.

Li discloses in figure 2 a delay locked loop 100 comprising a filter circuit 106 coupled between the phase detector 102 and the delay element 110 as required by the claim.

It would have been obvious to one skilled in the art at the time the invention was made to incorporate the teaching of filter in Li into Miyamoto's circuit since the filter would be used, as known in the art, to remove out-of-band and/or interfering signals.

As to claims 28 and 35, the scopes of these claims are similar to that of claim 16. Therefore, they are rejected for the same reason set fort above.

Response to Arguments

7. Applicant's arguments filed 11-16-07 have been fully considered but they are not persuasive.

Regarding the rejection of claim under 35 USC 112, Applicant's argument is based on basis that "the first input" is seen as signal at line 103. Examiner believes Applicant's interpretation of claim 15 is incorrect since lines 4-7 recite "the first delay element **101** is configured to generate a first output **104** responsive to a control signal **109** and *a first input*, and wherein **the second delay element 102 is configured to generate *the first input* responsive to the externally generated clock signal 103** and a set signal related to the frequency of the externally generated clock signal **103**" (emphasis added to illustrate Examiner's reasoning). Examiner's position is re-enforced by the recitation on line 20 such as "the feedback device **106** operable to delay the first output **104**". Consequently, "the first input" limitation cannot be seen and/or interpreted as a signal on line 103 as suggested by Applicant. Therefore, the rejection of claim under 35 USC 112 still stands.

Regarding the rejection of claim 15 under 35 USC 102, Applicant has argued that Miyamoto does not disclose *different delay elements* for different frequency ranges and also argued that same group of delay is also used for low frequencies. Examiner respectfully disagrees with Applicant's assertion since the recitation of claim calls for at least one second delay element for low frequency and further at least one second delay elements for high frequency. The recitation of claim does not call for the fact that a delay element is exclusively utilized in low frequency environment, not high frequency environment or vice versa. Also note that the recitation of claim does not define a range to be considered low/high frequency. Therefore, any delay element can be seen as operable in both low/high frequency environments.

Applicant is incorrectly asserted that [t]he Examiner has identified the delay line 22 being the second delay element of claim 15. Examiner respectfully disagrees since page 3, line 10 of Office Action indicates "a second delay element 402" which is shown in figure 10.

As to other claims, Applicant's arguments are based on argument for claim 15. Therefore, Examiner's responses with respect to claim 15, as noted above, are also applicable herein.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on Monday to Friday from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Richards can be reached at 571-272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

An T. Luu
12-26-07

N. DREW RICHARDS
SUPERVISORY PATENT EXAMINER